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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

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REPORT FOR THE MONTH OF JANUARY, 1938.

HAVRE:

Mild weather continued nearly the entire month, but subzero temperatures prevailed the last four days. The mean temperature of 24°, was 10° above normal. Light precipitation totaling 0.26 inch, mostly in the form of snow, failed to give much protection to winter grains, the outlook for which is doubtful. On the other hand, livestock, benefitting from the open weather, appear in good condition.

Station activities were confined chiefly to experimental cattle feeding, report writing, repairing machinery, cleaning seed, and various physical plant work in connection with the WPA projects.

Maximum temperature, 52°; minimum, -28°; precipitation, 0.26 inch; snowfall, 4.7 inches.

JUDITH BASIN:

The weather during January was more like spring than winter with the exception of the last three days when temperatures fell below zero for the first time during the month. The maximum temperatures were above 32° on 26 days. On the 30th we experienced the lowest minimum for the winter, -27°. Precipitation was considerably below normal. The wind movement for the month was relatively low. Only on a few days was there much drifting of snow.

Station activities consisted of care of the livestock, minor repair work, and continued work on the various reports.

The superintendent attended the annual Extension Workers and Departmental Conference at Bozeman, January 19 - 26th.

Maximum temperature, 50°; minimum, -27°; precipitation, 0.48 inch.

HUNTLEY:

Except for the last three days of the month, weather during January was mild and open. Average climatic records for the county show the month to be the warmest January in 44 years. Station records indicate three years in which the mean temperature for January was higher than in 1938. An abrupt change of weather at the close of the month brought snow and falling temperature which reached a minimum of -31° the night of the 29th.

Precipitation for January totaled 0.14 inch, which was about one-fifth the average and next to the lowest for the month in the history of the station. The ground is now covered with 3 inches of light snow.

Wind velocity was below the average, although on two days wind movement was high enough to cause a little soil blowing in the western part of the county. Winter wheat on the plots has seemed to suffer no ill effects from exposure to sun and wind.

Farmers have done little work in the fields during the month. Some corn has been threshed, and in the light-soil territory southwest of the station some plowing and disking was done. In most places, however, the ground is still frozen.

Maximum temperature, 62°; minimum, -31°; precipitation, 0.14 inch.

SHERIDAN:

January was comparatively mild. Maximum temperatures above freezing were recorded on all but seven days, and zero weather was experienced only on the last three days of the month. The average temperature was about 4° above the normal for the station. Wind movement was about average, and precipitation was just 0.03 inch above the station normal. In spite of the comparatively warm weather, snow on the ground in the vicinity of the station and east did not melt or settle appreciably except on a few days, and there was some snow on the ground throughout the month, about 3½ inches as the month ended.

Station work consisted mainly in cleaning grain and going over machinery and repairing same.

Maximum temperature, 45°; minimum, -21°; precipitation, 0.65 inch.

DICKINSON:

January 1938 was the mildest January since 1934. The mean temperature of 15.2° was about 5° above normal and 22° above January 1937. Zero temperatures or lower were recorded on only nine days. A minimum of -27° was registered on the 30th. The two cold spells were of short duration.

Precipitation of 0.99 inch was about double the normal amount for the month. Snowfall was measured as 13.5 inches and was the heaviest during January since 1929. Most of this fell in a storm ending the 13th in which about 10 inches was recorded. This snow drifted badly, closing most of the side roads, but the main highways were kept open. On several days temperatures were high enough so the snow melted and settled. About 8 inches of snow remained on the ground at the end of the month.

Maximum temperature, 42°; minimum, -27°; precipitation, 0.99 inch; snowfall, 13.5 inches.

MANDAN:

Horticulture - Data collected in 1937 from the fruit variety tests show the possibility of producing fruit under dry-land conditions. The trees and plants have suffered severely in many cases from the drought conditions of the past few years, but many have survived and made a partial recovery in 1937.

The apple and crab tests gave yields of 1,728 pounds in 1937, which were greater than the 1936 yields. Approximately 95 percent of these yields were crabs. Red Duchess and Dutchess were the outstanding apple varieties this year in quality and production. Silvia, Florence, and Alexis were crabs that showed up well in quality and production.

Plum and plum-hybrid tests also gave increased yields over 1936, there being 4,250 pounds of fruit. Highest yielders were generally native varieties, but among the ten highest was Minn.103, which is a good Japanese hybrid. A hybrid which appears to be one best under test is Minn. 133. This is a large, early maturing, fine quality plum which deserves watching. Other varieties of interest were Sel. 48, Sel. 46, Opata, and Sapa.

Cherries have suffered severely and bore very little fruit in 1937. Many of the plants show partial recovery and seem to be in fair condition.

Sandcherries have been very resistant to the drought conditions and bore medium crops in 1937. Some of the better varieties in regard to quality and production are Sel. 25-3, Sioux, and Sel.24-28.

Juneberries have also been very drought resistant and bore a good crop of fruit. Success stands out above any other variety in size and production, but the quality is not equal to the native varieties.

Raspberries were nearly all replaced in the spring of 1937, and no yields were recorded.

Currants, with the exception of the Golden currant selections, were so severely injured in 1936 that no fruit was produced in 1937. The Golden currant selections started to bear this year and seem to be drought resistant. This being the first crop since transplanting, the relative value of each selection has not been determined.

Gooseberries suffered as did the currants and gave no yields in 1937.

Grapes made a remarkable growth this year, showing little injury from the drought conditions except the production of a light crop of fruit. Dakota, Alpha, Beta, and Suelter were varieties of outstanding quality and yield.

The season in general was quite favorable for vegetables. The spring was backward but the copious rains in late May and early June evened up matters somewhat. Sweetcorn was especially successful, and tomatoes, eggplant, and green peppers produced fair crops. The dry spring and extreme heat in midsummer were detrimental to most root crops and also to cabbage.

A summary of yields in the acre garden follows:

Beans - Wax	44 qts.	Melon - Water	305 lbs.
Beans - Navy	26 lbs.	Onion	20 lbs.
Beets - Bunch	223 lbs.	Parsnips	0
Beets - Winter	84 lbs.	Peas	43½ qts.
Cabbage - Early	145 lbs.	Pepper	0
Cabbage - Late	31 lbs.	Potatoes	525 lbs.
Carrots - Bunch	49 lbs.	Pumpkin	339 lbs.
Carrots - Winter	94 lbs.	Rutabaga	125 lbs.
Cauliflower	85 lbs.	Squash - Summer	179 lbs.
Cucumber	37½ lbs.	Squash - Winter	535 lbs.
Eggplant	21 lbs.	Sweetcorn	927 ears.
Melon - Musk	0	Tomato	478 lbs.

The yields from vegetables grown in the auxiliary garden in the west coulee were quite variable. Salad crops including radishes, spinach, lettuce, and celery were below the average both in quality and yields, but variety tests with tomatoes, eggplant, peppers, beans, and sweetcorn were very successful.

Data from the potato variety trials shows that Chippawah, Triumph and Warba were the highest yielders. Chippawah was outstanding in yield, size and quality. A summary of the yields in bushels of No. 1 potatoes per acre is given:

Chippawah	156.1	Irish Cobbler	116.6
Triumph	142.3	Early Ohio	111.2
Warba	125.2		

The spacing experiment gave some interesting results this year. Chippawah was outstanding with Early Ohio and Warba following. Warba, however, seems to do better with medium spacing, while the rest gave higher yields with close spacing. The following summary shows the yields in bushels of No. 1 potatoes per acre at the three spacings:

	14 inch	20 inch	28 inch
Chippawah	180.1	149.3	133.4
Early Ohio	135.6	114.1	104.8
Warba	116.7	123.0	102.2
Irish Cobbler	117.8	103.7	112.6

Work with ornamental plantings and lawns about the grounds of the station varied but little from previous years. Considerable irrigation of lawns and shrubbery, especially in the spring and fall, was resorted to. There was but little mortality in existing plantings that had survived the previous year. Incidentally, the relative hardiness of the tree and shrub species for this region seems decidedly difficult to determine. Most of the species originally planted are still growing, but only successfully so in favorable locations. Water and some protection seem essential for some, variety in general not so important. This region seems comparatively free from damage caused by insects and bacterial diseases as far as ornamentals are concerned. Only two sprayings with arsenate of lead were necessary to keep leaf eating insects under control.

Weather during the month of January was mild, until the 24th when the minimum dropped to -14°, and it has been below zero since with the exception of one day.

The total snowfall for the month was 5.7 inches. There were 18 days with a precipitation from a trace to 0.20 inch. There were no extra high winds and there was little drifting of snow.

Maximum temperature, 41°; minimum, -24°; precipitation, 0.54 inch.

BELLE FOURCHE:

January was abnormally warm, but a cold wave occurred during the last few days of the month, subzero temperatures being recorded on January 29, 30, and 31. The mean temperature for the month was 25°, which is 9° above the 29-year average mean for January. Precipitation was limited to a few light showers and numerous flurries of snow, none of which were heavy enough to improve soil conditions or benefit crops. The total precipitation for the month was only

44 percent of the 30-year average for January. Strong winds were of frequent occurrence during the daytime, but there were only six days in which the average wind velocity for 24 hours exceeded 10 miles per hour. High winds on January 11 and 23 caused a little sifting of soil on some fields.

Frost has not penetrated the ground to a depth of more than 15 inches, but as a result of alternate freezing, thawing, and drying of the surface the top inch of soil is in a loose, friable condition favorable to blowing. Fall grain appears to be in nearly as good condition as at the close of the previous month.

Maximum temperature, 53°; minimum, -14°; precipitation, 0.20 inch.

ARCHER:

The weather during January was rather mild with considerable sunshine. During the latter half of the month the prairies and fields were completely open. Snowdrifts remain in ravines and shelterbelts. The coldest weather occurred during January 29 and 30, when the temperature dropped to -10°. At that time the winter wheat was in fair to good condition. Most plants were small but thrifty. A light flurry of snow preceded the low temperatures, and no doubt gave some protection to the plants. To date very little soil blowing has occurred.

Livestock generally are in good condition, and feed, under average conditions, is sufficient to last through the spring months.

Maximum temperature, 56°; minimum, -10°; precipitation, 0.09 inch.

NORTH PLATTE:

In sharp contrast to January of last year, temperatures for the month were considerably above normal. Only two below zero records were made. These were on the last days of the month. The mean minimum was 19°. The only precipitation was three very light snows that evaporated without adding any moisture to the soil. Several days of strong wind caused heavy soil blowing, especially from corn fields. Dust drifting onto pasture land will cause further damage to stands of grass already weakened by long drought. The mild weather has permitted livestock to continue in good condition.

Maximum temperature, 58°; minimum, -7°; precipitation, 0.07 inch.

AKRON:

The snow cover at the beginning of the month practically all melted during the first week. Thereafter the weather remained warm and agreeable until the only major storm occurred on the 29th. There were 8 trace precipitations, and 0.10 inch which fell the 19th as snow.

The first high northwest wind of the new year came on the 13th, but this raised practically no dust. Following particularly warm weather there was a persistently high northwest wind from the 24th to the 27th. This started dust on certain fields. Snow on the 28th placed a rather uniform covering on practically all fields within sight of the station and should tend to abate the blow menace until it melts.

Preparation of office records and cleaning and grading grain constituted the work schedule of the month.

Maximum temperature, 55°; minimum, -6°; precipitation, 0.18 inch; established precipitation record for January is 0.27 inch.

COLBY:

January was dry, warm, and generally pleasant with eight days of rather high winds. Measurable precipitation was recorded on only two days, 0.16 inch in the form of rain followed by snow on the 19th and 0.05 inch in the form of snow on the 29th. The mean temperature was 3° above the station average. On 6 of the 8 windy days there was considerable dust and soil blowing. Large acreages of wheat were damaged, especially where they had been closely grazed by sheep. Most of the time the ground was not frozen, except in the morning, and considerable tillage was done to stop and prevent blowing. Wheat is otherwise in good condition but is low on moisture. It is generally frozen down, but shows signs of slight growth on warm days. Pastures which are generally more bare than they have ever been before, blow considerably on windy days. Temperatures were below zero on two days.

Maximum temperature, 63°; minimum, -5°; precipitation, 0.21 inch; precipitation, 51-year average, 0.26 inch.

HAYS:

Twenty-three days were quiet and fine. Of the other eight, 4 days, 11th, 18th, 23rd and 25th, were fanned by light breezes resulting in "dusty" days. The 23rd started in the morning with a light breeze which became heavier by evening, continued heavy all night and most of the 24th. It was dusty most of the time, and very disagreeable for a few hours on the 24th, but none of these "dusty days" could be called "dust storms". On both the 13th and 16th the wind commenced raising in the forenoon, gradually increased until soon after noon, when maximum velocities of from 24 to 30 miles per hour were reached and maintained each day for about 2 hours after which the wind velocity gradually diminished to a calm by nightfall. During the height of these storms, if they could be called storms, visibility for a short period was reduced to from 200 feet to 1/8 mile. These storms have not even approached the severity of the black storms of 1935, but are good reminders of them, and of the fact that there is considerable danger during the next two months should heavy winds occur and continue for several days.

Thus far, wheat fields in this county have resisted the wind surprisingly well. No serious damage has occurred except in rare instances. The soil surface, however, is not in too good a condition. It has been breaking slightly under the effects of the wind. While there is no immediate danger under moderate winds, there is grave danger should heavy winds prevail.

Winter wheat is still in fair condition in this vicinity, that is, it is still alive, and most of it is sufficiently well-rooted to go through the winter providing it receives a little

moisture. However, a total of 0.64 inch precipitation during the past three months has not improved the poor condition of the subsoil, and the prospects generally are not encouraging for a normal crop.

Maximum temperature, 69°; minimum, -3°; precipitation, 0.06 inch.

GARDEN CITY:

There was very little cold weather except for the last few days of the month. On one day the maximum was 14° and the minimum was -1°. That is the lowest temperature thus far this winter. The past three months have been exceptionally dry, only a trace in November, 0.12 inch in December, and a trace in January.

The first dusty day of the year was January 11, and the first bad storm occurred on the 13th. There were 13 dusty days during the month, and on 4 of those bad dust storms occurred. There was a little soil moving on the station, but this was listed and is fairly well under control.

The wheat has not germinated, but it is well that it has not, as most of the wheat in this immediate vicinity that did germinate is dead.

Maximum temperature, 69°; minimum, -1°; precipitation, trace; wind velocity, 21.6 miles per hour.

TUCUMCARI:

The month was comparatively clear, dry, and pleasant. Although the mean temperature was normal, there were no readings below 11° above zero. The maximum reading for the month was 71°.

Two flurries of snow furnished a total of 0.13 inch precipitation. The plains section of the county was more fortunate, in that from one-half to three-fourths inch precipitation was received during the month. This saved, temporarily, a large wheat acreage which was in critical condition.

Average hourly wind movement on 2-foot anemometers was 4.9 miles and 5.7 miles in the yard and open field, respectively. High winds on two days moved some soil in the surrounding neighborhood. Fields are in perfect blow condition, where surface cultivation has not been performed, as the first few inches are dry, powdery, and ashy. Soil movement in this locality will be as severe as in the past few years, if wind movement is as extreme as in those years.

Livestock are strong and in fair flesh. Ranges are in only fair condition, but the open, pleasant weather has been a favorable factor to date.

DALHART:

The month is remembered for its lack of extreme climatic conditions. The mean temperature was 2° above the 30-year average, the actual maximum temperature was 72° and the minimum 8°. The month was 10° colder than January 1937. The wind velocity average was near the average for the month - the first 20 days were below normal, but the last 10 days brought it nearly up to normal. Soil movement was severe on one day, the 24th, and was bad on parts of four other days. The surface soil is so fine or slaked that the air can become dense with dust particles without severe soil erosion. The station is situated so that it will receive punish-

ment again this spring because of adjacent fields, especially on the north. The winds during the month were either from the southwest (which is always the prevailing direction) or from the north. The north winds during January were the more severe.

Winter wheat and rye have insufficient moisture and also have too poor a surface soil structure to stand much, if any, more severe wind movement.

There was no precipitation during the month.

BIG SPRING:

January was unusually mild and free from winds. Minimum temperatures remained above freezing most of the time. A minimum of 17° was recorded on January 30, which was the low for the winter thus far. Rainfall on the 4th and 5th totaled 0.56 inch, and that on the 20th, 21st and 22nd totaled 1.35 inches. The total for the month was 1.91 inches, the highest January precipitation since 1920 and the second highest since 1900. These rains have put the soil in fine condition for working, and as a result many farmers are now listing.

Increase fields and those used for cooperative work were plowed during the month; winter listing and plowing of plots was also accomplished during the month. All fallow plots and others without a protective covering were roughed up with the cultivator to help control soil blowing when the winds start. Other work consisted of overhauling the tractor and threshing sorghum seed.

Maximum temperature, 80°; minimum, 17°; precipitation, 1.91 inches.

LAWTON:

January temperatures ranged from a minimum of 12° on the 30th to a maximum 77° on the 16th. High wind velocity obtained on 6 days since the 23rd, the sky being filled with dust from distant points on several dates. The total monthly precipitation of 0.86 inch was recorded on the 21st to the 23rd.

Farmers complain of the shortage of moisture for small grains, but rainfall and temperatures compare very closely with the winter months of 1936-37. Station seedings of small grain continue to be in good condition.

January weather as a whole was quite favorable to outdoor work, and preparation of seedbeds for oats has been quite general on farms throughout the southwestern part of the State. Some seeding was done during the last half of the month and such work will be very general early in February if the weather permits.

The wheat grub worm is responsible for severely reduced stands or complete loss of stand on a good many fields in this part of the State. A brief survey in Comanche and Tillman Counties shows very appreciable injury. State entomologists advise that such injury will continue when warm spring weather prevails. The damage is generally found on land that has been continuously cropped to wheat for at least 5 years. Entomologists also advise that oats cannot be sown on this land this spring. It is believed that such row crops as cotton, sorghums, and cowpeas will clear the soil of such infestation. Station plots of wheat do not show any damage, even where continuous cropping has been practiced for 14 years.

WOODWARD:

The month of January ends with only 0.03 inch precipitation. Except for a low of 4° on the last day, temperatures have been moderate. There were only a few days of high winds. Due to slight cover of wheat over the surface these have done some damage. Farmers are, however, much more responsive toward using remedial measures than ever before. Straw and manure are being scattered on weak spots, and considerable cultivating and listing is being done. One field adjacent to the station blew badly, sifting sand onto station plots, but doing little damage. While slight growth of wheat favors blowing, it is not drawing heavily on moisture reserves and there is a possibility of good yields.

Warm weather stimulated flower buds, and much damage was probably done to fruit and ornamentals by recent low temperature. Jasmine and winter honeysuckle, for example, were coming into bloom as was Chinese elm. A short article on desert willow in the Country Gentleman has brought questions concerning it from states scattered all over the Union, showing the wide interest in plants of other than economic value.

Station work for the month consisted of hauling and stacking hay, cleaning grass and sorghum seeds, cultivating plots to prevent blowing, building grape trellis, pruning grapes, hauling brush, planting trees, making cuttings, and potting grass plants.

Maximum temperature, 75°; minimum, 4°; precipitation, 0.03 inch.

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NOTE:

Farmers' Bulletin No. 1797, "Implements and Methods of Tillage to Control Soil Blowing on the Northern Great Plains", by John S. Cole and George W. Morgan, has just been published. Copies have been mailed to each of the field stations of the Division of Dry-Land Agriculture.

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